

What is claimed is:

1. An encrypting apparatus, comprising:  
 circuit means, having at least one programmable  
 logic device, for forming an encrypting circuit with  
 the programmable logic device corresponding to given  
 encrypting specifications; and

changing means for reading change data for  
 changing the encrypting specifications and  
 automatically changing the encrypting circuit  
 corresponding to the change data.

2. The encrypting apparatus as set forth in  
 claim 1, wherein

said changing means includes configuration means  
 for writing a mapping data object that represents the  
 structure of the encrypting circuit to the  
 programmable logic device, and changes the encrypting  
 circuit with an existing mapping data object as the  
 change data.

3. The encrypting apparatus as set forth in  
 claim 1, wherein

said changing means includes:

compiler means for generating a mapping data

object that represents the structure of the encrypting circuit, by compiling a library written in a hardware description language, and

configuration means for writing the mapping data object to the programmable logic device; and

said changing means reads an existing library as the change data, compiles the existing library, and changes the encrypting circuit.

4. The encrypting apparatus as set forth in claim 1, wherein

said changing means includes:

database means for storing an encrypting algorithm file having a predetermined encrypting algorithm,

compiler means for generating a mapping data object that represents the structure of the encrypting circuit, by compiling a library written in a hardware description language, and

configuration means for writing the mapping data object to the programmable logic device; and

said changing means retrieves a relevant encrypting algorithm file and changes the encrypting circuit with the library in the relevant encrypting algorithm file, corresponding to setup data given as

the change data from the outside.

5. The encrypting apparatus as set forth in claim 1, further comprising:

5            network connecting means for connecting the  
encrypting apparatus to a communication network,  
wherein

~~said changing means reads the change data from the communication network.~~

10                   6.    The encrypting apparatus as set forth in  
                    claim 5, wherein

15        said network connecting means receives the  
encrypted change data from the network, and said  
changing means changes the encrypting circuit  
corresponding to the encrypted change data.

7. The encrypting apparatus as set forth in claim 1, wherein

20        said changing means periodically updates the  
      encrypting specifications.

8. The encrypting apparatus as set forth in claim 1, wherein

25           said changing means updates the encrypting

9. The encrypting apparatus as set forth in claim 1, wherein

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circuit means, having at least one programmable logic device, for forming a decrypting circuit with the programmable logic device corresponding to given decrypting specifications; and

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25        said changing means includes configuration means  
for writing a mapping data object that represents the  
structure of the decrypting circuit to the

programmable logic device, and changes the decrypting circuit with an existing mapping data object as the change data.

5           12. The decrypting apparatus as set forth in claim 10, wherein

          said changing means includes:

          compiler means for generating a mapping data object that represents the structure of the decrypting circuit, by compiling a library written in a hardware description language, and

          configuration means for writing the mapping data object to the programmable logic device; and

10           said changing means reads an existing library as the change data, compiles the existing library, and changes the decrypting circuit.

          13. The decrypting apparatus as set forth in claim 10, wherein

20           said changing means includes:

          database means for storing a decrypting algorithm file having a predetermined decrypting algorithm,

          compiler means for generating a mapping data object that represents the structure of the decrypting circuit, by compiling a library written in a hardware

description language, and

configuration means for writing the mapping data object to the programmable logic device; and

5        said changing means retrieves a relevant decrypting algorithm file and changes the decrypting circuit with the library in the relevant decrypting algorithm file, corresponding to setup data given as the change data from the outside.

10        14. The decrypting apparatus as set forth in claim 10, further comprising:

network connecting means for connecting the decrypting apparatus to a communication network, wherein

15        said changing means reads the change data from the communication network.

15. The decrypting apparatus as set forth in claim 14, wherein

20        said network connecting means receives the decrypted change data from the network, and said changing means changes the decrypting circuit corresponding to the decrypted change data.

25        16. The decrypting apparatus as set forth in

claim 10, wherein

said changing means periodically updates the decrypting specifications.

5           17. The decrypting apparatus as set forth in claim 10, wherein

said changing means updates the decrypting specifications corresponding to an external command.

10           18. The decrypting apparatus as set forth in claim 10, wherein

said changing means changes the decrypting specifications corresponding to at least one of a communication path of data to be encrypted, a degree of security thereof, and a process speed required therefor.

19. A signal processing apparatus, comprising:  
circuit means, having at least one programmable logic device, for forming a circuit corresponding to given specifications; and

changing means for reading change data for changing the specifications of the circuit, the change data representing one of encrypting specifications or  
25   decrypting specifications, and automatically changing

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the circuit corresponding to the change data.

20. An encryption processing system for use with a communication system for exchanging encrypted data through a communication network, comprising:

encrypting circuit means, having at least one programmable logic device, for forming an encrypting circuit corresponding to given encrypting specifications;

10 encryption changing means for reading encryption change data for changing the encrypting specifications and automatically changing the encrypting circuit corresponding to the encryption change data;

15 decrypting circuit means, having at least one programmable logic device, for forming a decrypting circuit corresponding to given decrypting specifications; and

20 decryption changing means for reading decryption change data for changing the decrypting specifications and automatically changing the decrypting circuit corresponding to the decryption change data.

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~~21. An encrypting apparatus, comprising:  
encrypting means, composed of an unit of which  
25 circuit connections for encrypting data can be changed~~



corresponding to an external command, for encrypting data; and

changing means for changing the circuit connections of said encrypting means corresponding to specifications of the encrypting algorithm <sup>only</sup> when the specifications are changed.

22. An decrypting apparatus, comprising:

decrypting means, composed of an unit of which circuit connections for decrypting data can be changed corresponding to an external command, for decrypting data; and

changing means for changing the circuit connections of said decrypting means corresponding to specifications of the decrypting algorithm <sup>only</sup> when the specifications are changed.

23. An encrypting method, comprising the steps of:

forming an encrypting circuit corresponding to given encrypting specifications with at least one programmable logic device; and

reading change data for changing the encrypting specifications and automatically changing the encrypting circuit corresponding to the change data.

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24. A decrypting method, comprising the steps of:

forming an decrypting circuit corresponding to given decrypting specifications with at least one programmable logic device; and

reading change data for changing the decrypting specifications and automatically changing the decrypting circuit corresponding to the change data.

25. A signal processing method, comprising the steps of:

forming a circuit corresponding to given specifications with at least one programmable logic device; and

reading change data for changing the specifications of the circuit, the specifications representing one of encrypting specifications or decrypting specifications, and automatically changing the circuit corresponding to the change data.

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